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NAIS Draft Strategic Plan and Draft Program Standards Comments  
Docket No. 05-015-1  
Regulatory Analysis and Development PPD  
APHIS, Station 3C71  
4700 River Road, Unit 118  
Riverdale, MD 20737-1238

Dear National Animal Identification Development Team:

Thank you for the opportunity to comment on the draft strategic plan and draft program standards for the National Animal Identification System. The recent detection of a cow born and raised in Texas with Bovine Spongiform Encephalopathy (BSE) indicates the importance of being able to track an animal's origin and movement throughout its life and to determine its age, offspring and cohorts. This recent incident also underscores the important role DNA technology can play in making these determinations. A statement by APHIS describing the methods employed to track the infected animal pointed out that "due to the fact that this animal was sampled at the same time as four other animals and parts of the carcass were stored together, **USDA made the decision to conduct DNA confirmatory testing before announcing the state of origin...DNA testing has now verified that USDA correctly identified the positive animal**" (emphasis added)

An animal identification program which includes DNA sampling and storage is the only tracking mechanism that will permit the USDA to identify the origins of a specific animal as well as identify parts of the animal that may have been separated from the original. A study conducted in the fall of 2004 under the auspices of the Tri-National Livestock Health and Identification Consortium and the Colorado Livestock Identification and Tracking Project, both of which are coordinated by the Colorado State Veterinarian, demonstrated the strength of adding DNA technology to the identification process. The double-blind study, involving MetaMorphix, Inc., Colorado State University (CSU) and RMS Research Management Systems USA successfully matched 34 cows through DNA samples, alone. In every single DNA test conducted, including matching duplicate blood samples, matching impure blood samples, or matching blood samples to hair samples, the results were the same: **100% accuracy**. Moreover, the results were delivered to the Colorado State Veterinarian in 32 hours, 14 minutes (well within the 48 hour goal set by the NAIS). The outcome of this study has far-reaching implications for the establishment of an effective and meaningful animal ID system in the United States. Not only can animals be tracked quickly using DNA technology but also their identification is irrefutable. Furthermore, the technology allows for the expansion of the

system to post harvest applications since only a blood sample (as opposed to a live animal) is required to conduct an identity test.

Because USDA will ultimately turn to DNA analysis for absolute confirmation in the event of a contamination incident, we suggest that a DNA component be incorporated into the National Animal Identification System from the outset so that the approach to verification is systematic and not *ad hoc*. Using DNA after an outbreak can be extremely time consuming, costly and lead to many dead-ends. An animal tracking system based on identification of individuals with RFIDs combined with DNA-matching technology provides the additional benefits of quality control assurance as well as the quantitative determination of the effectiveness of the entire animal-tracking program.

A DNA sample can be collected at the very same moment an RFID tag is issued thereby minimizing the incremental cost.. This proposal envisions one tagging operation to fulfill both functions: the animal is tagged with an RFID tag which produces a blood sample to be collected and archived. As animals move to other premises in downstream production a small percentage are re-sampled for audit purposes, and analyzed along with the archived samples from those animals. The DNA profiles that are created from both the archived sample and the new sample are compared to ensure a match. Utilization of DNA-matching technology as a tool to monitor the effectiveness of any animal tracking system provides additional assurance to consumers, as well as international markets, of the safety of the U.S. beef supply.

Another distinguishing feature of a DNA-based program is that an animal's true identity can be determined regardless of whether a tag has been lost, tampered with or switched. In other systems if a tag has been lost or switched, there is no absolute method to confirm the original identity of that particular animal. As a result, the investigation of a disease outbreak may become cumbersome as investigators may track the wrong animal history and are unable to locate herd mates or determine the premises where the contamination occurred.

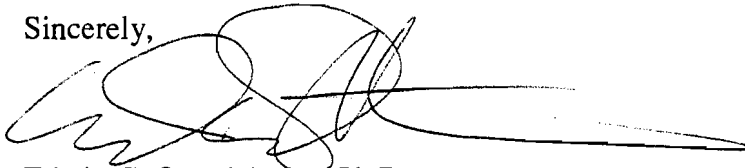
With a DNA sample, the true identity of that animal is irrefutable and the necessary measures can be taken to contain an outbreak. The animal's history can be confirmed as far back as the farm of origin and tracked as far forward as the consumer's plate. A program based on DNA sampling and storage will allow authorities to obtain information about the movement of an animal over its lifetime within 48 hours. Such a quick response will allow USDA to quickly quarantine any affected animals and recall any tainted meat. The combination of the Department's rapid response and the accuracy of DNA sampling will not only contain the problem, but will also assure the public and U.S. trading partners that the US meat supply is safe.

Further, the needed DNA sampling and storage technology is currently available and could be implemented on a programmatic basis across the country quickly and cost-effectively, without significant disruption to livestock producers. If DNA sampling is linked to the ear-tagging process, whereby the DNA sample is taken from the drop of

blood that results during the tagging process, it will require little additional work on the part of ranchers and feedlots.

Thank you very much for the opportunity to comment on a draft strategic plan for a National Animal Identification Program. As you develop the details of a final program, we urge you to consider the overwhelming benefits associated with the use of DNA sampling and storage.

Sincerely,

A handwritten signature in black ink, appearing to be 'Edwin C. Quattlebaum', with a long horizontal line extending to the right.

Edwin C. Quattlebaum, Ph.D.  
Chairman, President and CEO